

Parameter	Value	Unit
Initial concentration of $\text{H}_2\text{O}_2$	0.01	M
Initial concentration of $\text{Fe}^{2+}$	0.001	M
Initial concentration of $\text{H}_2\text{O}$	55.5	M
Temperature	25	$^{\circ}\text{C}$
pH	3.0	
Reaction time	0 to 100	min
Concentration of $\text{H}_2\text{O}_2$ at time $t$	0.005	M
Concentration of $\text{Fe}^{2+}$ at time $t$	0.0005	M
Concentration of $\text{H}_2\text{O}$ at time $t$	55.5	M
Rate of reaction	0.0001	$\text{M s}^{-1}$
Order of reaction with respect to $\text{H}_2\text{O}_2$	1	
Order of reaction with respect to $\text{Fe}^{2+}$	1	
Order of reaction with respect to $\text{H}_2\text{O}$	0	
Overall order of reaction	2	
Rate constant $k$	0.0001	$\text{M}^{-1} \text{s}^{-1}$
Half-life $t_{1/2}$	100	min
Activation energy $E_a$	50	$\text{kJ mol}^{-1}$
Pre-exponential factor $A$	1000	$\text{M}^{-1} \text{s}^{-1}$
Frequency factor $\log A$	3.0	
Reaction mechanism	Proposed	
Step 1: $\text{Fe}^{2+} + \text{H}_2\text{O}_2 \rightarrow \text{Fe}^{3+} + \text{OH}^- + \text{OH}^\bullet$		
Step 2: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{HO}_2^\bullet + \text{H}_2\text{O}$		
Step 3: $\text{HO}_2^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{O}_2 + \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 4: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 5: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 6: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 7: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 8: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 9: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 10: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 11: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 12: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 13: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 14: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 15: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 16: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 17: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 18: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 19: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 20: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 21: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 22: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 23: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 24: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 25: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 26: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 27: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 28: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 29: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 30: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 31: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 32: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 33: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 34: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 35: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 36: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 37: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 38: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 39: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 40: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 41: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 42: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 43: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{OH}^\bullet$		
Step 44: $\text{OH}^\bullet + \text{H}_2\text{O}_2 \$		

As a below named inventor, I declare that I believe I am an original, first and joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

## 26 HUMAN SECRETED PROTEINS

the specification of which is being filed concurrently herewith.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application, which designated at least one country other than the United States listed below, and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

<u>Priority Claimed</u>	
Yes	No

(Number)	(Country)	(Day/Month/Year Filed)
----------	-----------	------------------------

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>60/137,725</u>	<u>07 June 1999</u>
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or under § 365(b) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information that is material to patentability as defined in 37 C.F.R. § 1.56 that became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>PCT/US00/15187</u>	<u>02 June 2000</u>	<u>Pending</u>
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: James H. Davis (Reg. No. 40,582), Kenley Hoover (Reg. No. 40,302), Joseph Kenny (Reg. No. 43,710), Jonathan L. Klein (Reg. No. 41,119), and Michele Wales (Reg. No. 43,975) of Human Genome Sciences, Inc. 9410 Key West Avenue, Rockville, Maryland, 20878.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**Full name of first joint inventor:** Steven M. Ruben

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 18528 Heritage Hills Drive, Olney, MD 20832 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Charles E. Birse

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 13822 Saddlevue Drive, North Potomac, MD 20878 Citizenship: GB  
Post Office Address: same as above

**Full name of additional joint inventor:** Roxanne D. Duan

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 5515 Northfield Road, Bethesda, MD 20817 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Daniel R. Soppet

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 15050 Stillfield Place, Centreville, VA 22020 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Craig A. Rosen

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 22400 Rolling Hills Road, Laytonsville, MD 20882 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Yanggu Shi

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 437 West Side Drive, Apt. 102, Gaithersburg, MD 20878 Citizenship: CN  
Post Office Address: same as above

**Full name of additional joint inventor:** David W. LaFleur

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 3142 Quesada Street, N.W., Washington, DC 20015 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Henrik Olsen

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 182 Kendrick Place, #24, Gaithersburg, MD 20878 Citizenship: DK  
Post Office Address: same as above

**Full name of additional joint inventor:** Reinhard Ebner

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 9906 Shelburne Terrace, #316, Gaithersburg, MD 20878 Citizenship: DE  
Post Office Address: same as above

**Full name of additional joint inventor:** Kimberly A. Florence

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 12805 Atlantic Avenue, Rockville, MD 20851 Citizenship: US  
Post Office Address: same as above

**Full name of additional joint inventor:** Jian Ni

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 5502 Manorfield Road, Rockville, MD 20853 Citizenship: CN  
Post Office Address: same as above

**Full name of additional joint inventor:** Paul Young

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Residence: 122 Beckwith Street, Gaithersburg, MD 20878 Citizenship: US  
Post Office Address: same as above